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Global Polio Eradication Progress 1999


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Every child counts

Chaque enfant compte

Cada niño cuenta

Нам дорога жизнь каждого ребенка

每位儿童皆举足轻重

لكل طفل أهميته ووزنه

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Global Polio Eradication

Progress 1999

VACCINES AND BIOLOGICALS

World Health Organization
2000

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Summary

The global initiative to eradicate polio by the end of 2000 has become the largest public health initiative in history, and is spearheaded by WHO, Rotary International, U.S. Centers for Disease Control and Prevention, and UNICEF. During 1999, extraordinary progress continued with the number of polio-endemic countries declining from 50 in 1998 to 30 in 1999. Of the three types of poliovirus, type 2 poliovirus reached the verge of extinction with the only known remaining foci existing in northern India. Polio incidence declined to the lowest levels ever in 1999, although reported cases increased slightly to 7 012 due to improvements in surveillance and polio outbreaks in Angola and Iraq. Existing challenges to the initiative included maintaining high-quality activities, gaining access to children in conflict affected countries, and ensuring political and financial support until certification is achieved in 2005. An additional challenge, ensuring sufficient oral polio vaccine, emerged during 1999 as a result of marked acceleration of immunization activities. The public-private sector partnership supporting the initiative expanded in 1999 to include the Bill & Melinda Gates Foundation, Mr. Ted Turner's United Nations Foundation, the World Bank, Aventis Pasteur, and De Beers. ❐

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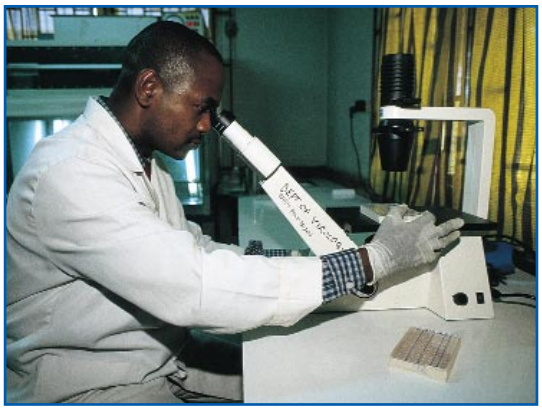

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Global Polio Eradication – Progress 1999

The global effort to eradicate polio is the largest pubic health initiative in history. The initiative was launched in 1988 by the World Health Assembly with the goals of eradicating polio while strengthening capacity to control other major childhood diseases. Extraordinary progress has been made to achieve polio eradication by 2000 and global certification of eradication by 2005.

In 1988, polio existed in over 125 countries on five continents, and more than 350 000 children were paralyzed that year. By the end of 1999, the number of polio-infected countries decreased to 30 (Figure 1), polio was eliminated from another three continents, and polio cases fell to 7 012 reported (maximum estimated of 20 000). With the eradication of polio and the eventual cessation of polio immunization, the world will save US $1.5 billion per year.

Figure 1: Polio eradication progress, 1988-1999*

* as of 13 April 2000

This report summarizes the polio eradication initiative's:

(1) major highlights and accomplishments during 1999;
(2) status of poliovirus transmission at beginning of 2000;
(3) status and quality of strategy implementation of: national immunization days, acute flaccid paralysis surveillance, Mop-up immunization campaigns, the global laboratory network, routine immunization, and the Global Alliance for Vaccines and Immunization (GAVI),
(4) optimization of impact on health systems;
(5) preparations for the post-eradication era;
(6) partnership support and advocacy making this initiative a reality;
(7) financial resource requirements; and
(8) challenges and priorities during the Mop-up and Certification Phase, 2000 – 2005. ❐

1999 Highlights and Accomplishments

November 1999: A First Anniversary of the Last Polio Case in Europe. Melik Minas, the last case, was 33 months old when paralyzed with polio in November 1998 in Turkey. He had never been vaccinated. Following case identification, a massive Mop-up immunization campaign was conducted in southeast Turkey and neighbouring areas of Iran, Iraq, and Syria. No additional cases have been reported since.

Spring 1999: Pakistan & Nigeria launched the largest ever house-to-house mass immunization campaigns. Over 42 million children were reached, many vaccinated for the first time.

24 May 1999: All Member States at the World Health Assembly unanimously agreed to accelerate polio eradication activities, and by September, all major endemic countries had adopted the strategy. The number of National Immunization Days (NIDs) was increased, and a house-to-house immunization strategy was added to NIDs to reach and vaccinate over 470 million children.

August to October 1999: The UN Secretary-General led negotiations that established "Days of Tranquillity" in the Democratic Republic of the Congo. Access was established, and over 8 million children vaccinated.

Sensitivity of acute flaccid paralysis (AFP) surveillance has doubled since 1997, with reported AFP cases increasing to nearly 29 000 globally and more than 50 000 stools tested for polio.

Fall / Winter 1999: In India, a record 147 million children were immunized each round during four NIDs, and over one billion doses of oral polio vaccine (OPV) were administered. India is the largest polio reservoir and accounted for approximately 40% of all polio cases reported during 1999.

STOP (Stop Transmission of Polio) teams were established and deployed to 15 countries to work closely with national public health staff to improve capacity for polio surveillance and the quality of NIDs.

Every polio endemic country conducted NIDs. Sierra Leone completed the list by conducting NIDs in 1998/99, when a cease-fire ended 8 years of civil war.

The Bill & Melinda Gates Foundation and Mr. Ted Turner's United Nations Foundation donated US $78 million in new support. Other new partners – the World Bank, Aventis Pasteur, De Beers – brought an additional US $56 million. Canada, the European Union, Germany, Italy, the United Kingdom, and the United States markedly increased their support.

Vitamin A was administered during polio immunization campaigns in over 50 countries. ❐

Melik Minas, the last known polio case in the WHO European Region

Photo: © WHO/EURO

Status of Polio Transmission

Extraordinary progress towards polio eradication continued in 1999. The number of known or suspected polio-endemic countries decreased from 50 countries in 1998 to 30 in 1999. Type 2 polio (one of three types of poliovirus) is on the verge of extinction with the only known foci existing in northern India. Polio incidence declined to the lowest levels ever in 1999, although reported cases increased slightly to 7 012 due to improvements in surveillance and a large outbreak in Angola. Polio was eliminated from the fifth of the seven continents with over a year elapsing since the last European case.

Polio-free Regions

Three of the six WHO Regions representing 115 countries have been polio-free for more than one year.

Americas Region:

The last case of polio in the Americas Region occurred in 1991. During 1999, a polio outbreak in Angola appeared to threaten the polio-free status of the Americas when two suspected cases were reported in Brazil. Neither case was confirmed.

Western Pacific Region:

The last case of endemic polio in the Western Pacific Region was reported in 1997. A 1999 case in China was associated with an imported poliovirus from India. Implications for Regional certification will be considered during 2000. No Region is safe from polio until all Regions are polio-free.

European Region:

The last known case of polio in the European Region occurred in Turkey in November 1998.

Remaining Polio-endemic Regions

African Region (46 countries)

Twenty of the 46 countries in the Region are endemic or probably endemic. In 1999, 2 825 polio cases were reported in the African Region; 238 of these were laboratory-confirmed (Table 1). Poliovirus circulation in the African Region is confined largely to the Horn of Africa, and west and central Africa. The most intense transmission occurred in Nigeria, Chad, and the Democratic Republic of the Congo. A summary of polio in the

Table 5: Reported AFP cases, surveillance quality indicators and confirmed poliomyelitis cases 1998-1999, by WHO Region*

	AFP reported		Non-polio AFP rate		Percent AFP with adequate specimens		Confirmed Polio (wild virus confirmed)	
WHO Region	*1998*	*1999*	*1998*	*1999*	*1998*	*1999*	*1998*	*1999*
African Region	1 699	4 750	0.30	0.70	36%	31%	993 (93)	2825 (238)
American Region	1 662	1 646	0.95	0.93	73%	68%	0	0
Eastern Mediterranean Region	2 216	2 979	0.88	1.13	64%	69%	555 (230)	833 (463)
European Region	1 308	1 786	0.94	1.24	67%	75%	26 (26)	0
South East Asian Region	11 352	11 816	1.25	1.52	60%	71%	4775 (1942)	3353 (1160)
Western Pacific Region	6 420	5 766	1.43	1.27	86%	86%	0	1(1)**
Global total	24 657	28 743	1.08	1.30	67%	67%	6349 (2294)	7012 (1862)

* *Data as of 6 March 2000*
** *Importation into China, probable source was India*

WHO African Region, by countries in special situations and by epidemiologic block, follows.

Countries in Special Circumstances

Nigeria reported 974 cases, including 94 laboratory-confirmed cases in 1999 and continues to have intense polio transmission in nearly all parts of the country. Nigeria is a major reservoir of poliovirus and exports poliovirus to countries throughout west and central Africa.

Angola reported 1 103 cases, including 89 deaths, as a polio epidemic swept the country in early 1999. Displaced children who had never been vaccinated were at the highest risk during this outbreak.

Democratic Republic of the Congo (DR Congo) reported 45 cases in 1999 and is a major reservoir of poliovirus with reported cases understating actual incidence due to inadequate surveillance in the majority of the country. Poliovirus transmission in DR Congo represents a continuing threat to the apparent polio-free status of neighbouring countries in east Africa.

Melita with her baby Johnny in Angola

Photo: © Lord Snowdon

Ethiopia reported 133 cases of polio in 1999 but none was laboratory confirmed. Despite the lack of poliovirus isolates, the real polio epidemiologic situation remains unclear due to inadequate surveillance sensitivity and laboratory capacity.

Four Epidemiologic Blocks of the AFRO Region

Southern Africa Block (14 countries, including 5 island nations)

All countries of the Southern Africa Block appear polio-free. The last confirmed case in this block was reported in 1997 in Madagascar. However, there is a high risk of unrecognised low-level polio transmission in Mozambique, Madagascar, and Malawi, in particular, because surveillance remains inadequate. The cessation of NIDs in some southern African countries coupled with poor routine oral polio vaccine (OPV) coverage increases the risk that polio may become re-established.

East Africa Block (7 countries)

The East Africa Block countries of Zambia, Tanzania, Uganda, Kenya, Rwanda, and Burundi appear polio-free. The last confirmed cases occurred in Uganda in 1996, and in Zambia and Tanzania in1995. Polio transmission continued to occur at low levels in Eritrea, which reported seven cases in 1999. However, every country is at risk of importation and reestablishment of polio transmission because all countries border an endemic area and have low coverage with the three childhood doses of OPV (OPV3).

Central Africa Block (6 countries)

Intense polio transmission continues in Chad, which reported 105 polio cases, of which 35 were laboratory-confirmed. Sixty percent of AFP cases with specimens collected were positive for poliovirus in that country. Cameroon and Central African Republic appear to have low levels of polio transmission, but remain at risk due to proximity to countries with high transmission levels. Although Congo, Gabon, and Equatorial Guinea had no virologically confirmed cases, surveillance is extremely weak and there is a very high risk of unrecognised transmission.

West Africa Block (15 countries)

Polio transmission continues in this Block, and is most intense in Benin, Liberia, Niger, and probably Sierra Leone. Ghana, Mali, Senegal, Sierra Leone, and Togo reported low levels of transmission with laboratory-confirmed cases. Due to low levels of poliovirus transmission and good AFP surveillance quality, six countries are poised to enter the Mop-up phase of eradication (Cote d'Ivoire, Ghana, Guinea, Mali, Senegal, and Togo.) Suboptimal AFP surveillance quality limited detection of probable virus in Burkina Faso, Guinea-Bissau, and Gambia.

Eastern Mediterranean Region (23 countries)

In 1999, 833 cases were reported in the Eastern Mediterranean Region (Table 1), including 463 laboratory-confirmed cases. Polio transmission continues to be intense in Pakistan, which reported 501 cases, and is a major reservoir for poliovirus. Afghanistan had widespread circulation with 150 reported cases, and poliovirus with marked genotypic similarity to virus in Pakistan. Poliovirus from Afghanistan was epidemiologically linked to the three polio cases reported in Iran during 1999. Although two of these appear to have been imported viruses, low-level endemic transmission of poliovirus may be continuing. After reporting zero cases in 1998, a widespread polio outbreak occurred in Iraq with 127 reported cases, including 72 laboratory-confirmed polio cases.

Delivering OPV in Kowkaban, Yemen

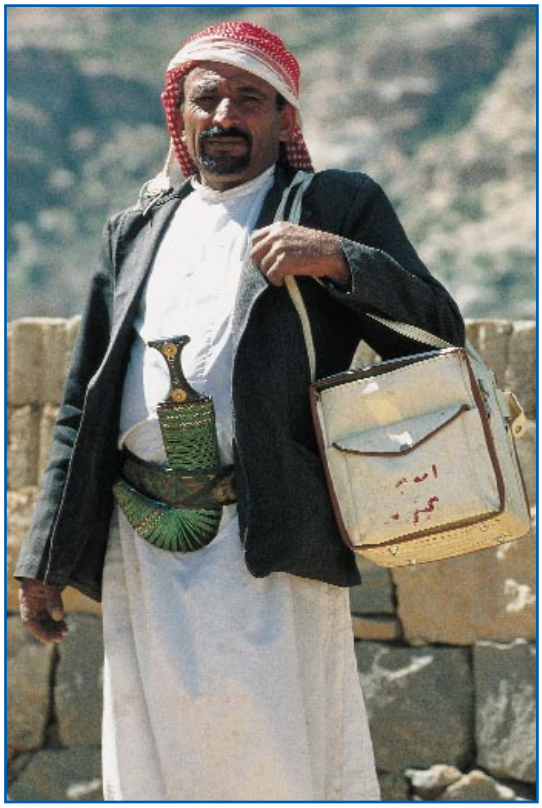


Photo: © WHO/ Jean-Marc Giboux

Sudan (51 cases), and Somalia (16 cases) also reported polio cases. Egypt has made substantial progress with the lowest transmission ever, however focal transmission continued (in Assiut and Minya) in the Upper Nile.

South East Asia Region (10 countries)

In 1999, 3 353 polio cases were reported in the South East Region, including 1 160 laboratory-confirmed cases (Table 1) from four countries. Reported polio cases in India declined to 2 802 cases, a 35% decline from 1998. Intense transmission continues to occur in Bihar and Uttar Pradesh, two States which are also the only known remaining foci of poliovirus Type 2 transmission. Polio transmission has markedly decreased in the southern part of India which is now entering the Mop-up Phase of polio eradication.

Bangladesh reported 397 cases in 1999. Despite this large number, genetic typing demonstrated that several poliovirus lineages are nearing extinction, and the biodiversity of the virus has substantially decreased as compared with previous years. Nepal reported only one laboratory-confirmed case in 1999, and appeared to have only focal transmission along its border with India. In Myanmar, four cases due to an imported virus were detected with subsequent rapid mass vaccination. No additional cases have been reported. The polio situation in DPR Korea remains unclear due to lack of surveillance and laboratory data. ❐

Status and Quality of Strategy Implementation

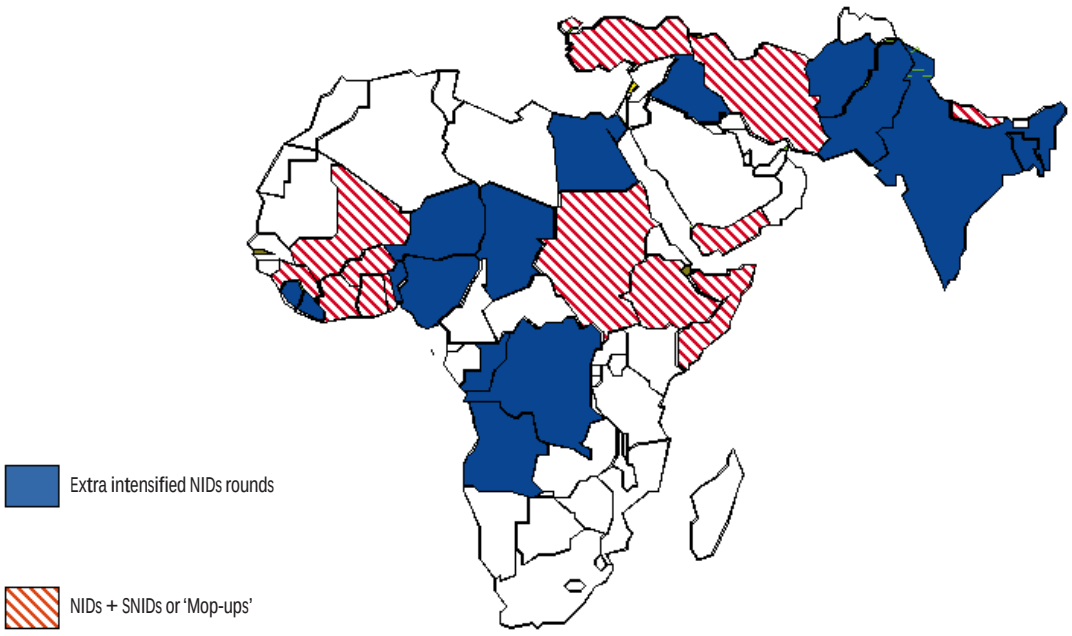
National Immunization Days

- NIDs or sub-national immunization days (SNIDs) were conducted in 83 countries, reaching more than 470 million children (Figure 2). Full NIDS were conducted in 70 countries, often with SNID rounds in high-risk areas. In India alone, over one billion OPV doses were distributed during four NIDs and two SNIDs (October 1999 to March 2000). Thirteen mostly polio-free countries in the European and Western Pacific Regions conducted SNIDs only.

- Vitamin A supplementation was included in 50 of the 83 countries conducting supplementary immunization activities in 1999.

- In a major policy shift to accelerate polio eradication activities, the number of NIDs rounds was increased in reservoir and other priority countries (Figure 2). Afghanistan and India conducted four rounds of NIDs, with two additional rounds of SNIDs in India in early 2000. Three rounds of NIDs were conducted in Angola and DR Congo. However, many children were missed in Angola due to internal disturbances.

Figure 2: Accelerated polio immunization activities 1999-2000



- The quality of NIDs and SNIDs was improved by strengthened planning at provincial and district levels, and by extensive use of house-to-house vaccination strategies. These "intensified" NIDs and SNIDs were featured in Afghanistan, Pakistan, and Nigeria, with resulting in increases of as much as 50% in the number of children reached in some provinces.

- The quality of NIDs was threatened by a global OPV shortfall that resulted from uncertainty of supply, cancelled shipments, and rescheduling of major orders. Many countries were adversely affected by the uncertainty of the vaccine supply, including cancelled or delayed rounds in Chad and Ghana, receipt of different presentations of the vaccine (e.g. Spanish labels in non-Spanish speaking countries, 10 instead of 20 dose vials), and routine OPV orders postponed.

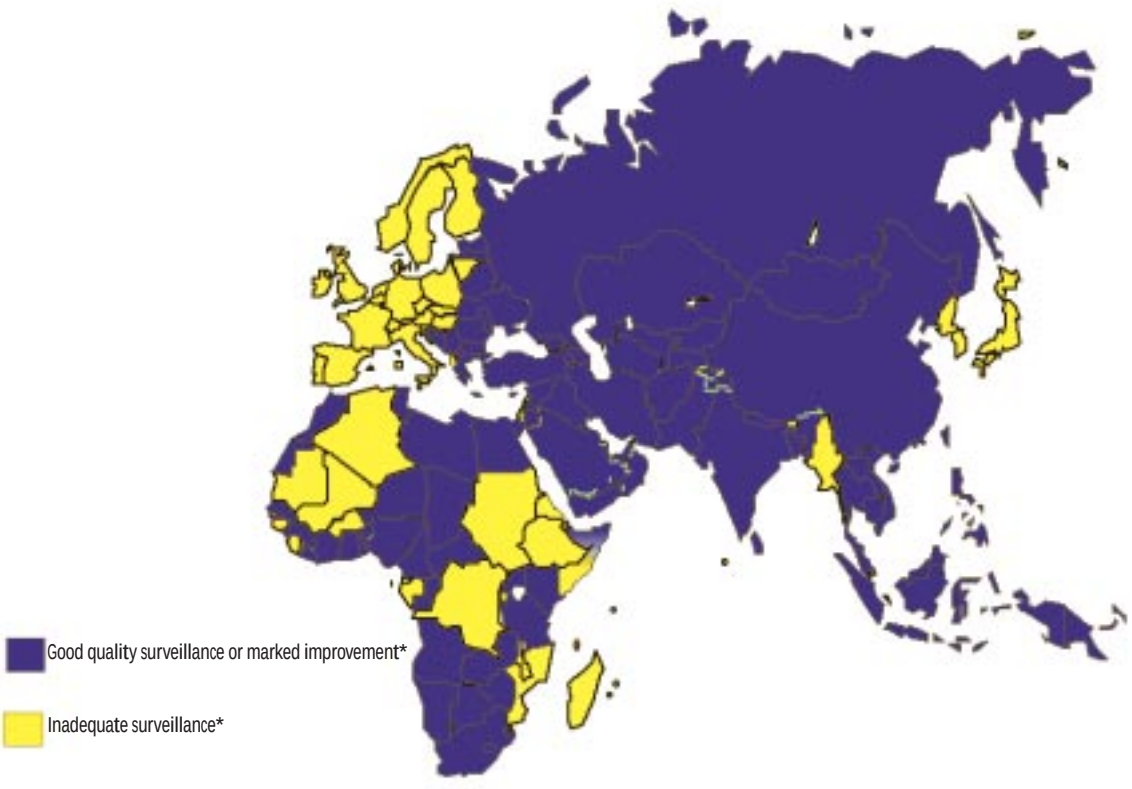
- Evaluation of the quality of NIDs was improved by monitoring the number of children vaccinated for the first time (zero-dose monitoring), process evaluations, and limited use of coverage surveys. However, high-quality AFP surveillance remains the gold standard for evaluating the quality and effectiveness of NIDs and SNIDs.

Acute Flaccid Paralysis (AFP) Surveillance

AFP Overview

AFP surveillance is used to detect polio cases and reaches certification standard if the non-polio AFP rate is ≥ 1 / 100.000 population aged < 15 years, adequate specimens are collected from 80% or more of AFP cases, and specimens are evaluated on a timely basis in accredited laboratories (Table 1).

Figure 3: Endemic or recently endemic country priorities for improving surveillance in 2000*



* data as of February 2000, WHO/HQ

High-quality surveillance was achieved by the Western Pacific Region as well as the European, South East Asia, and Americas Regions. At Regional and country levels, delay in achieving certification standard surveillance can result in late detection of polio infected areas. Therefore high priority must be given to achieving rapidly certification standard surveillance.

Polio-Endemic Regions

- **The African Region** improved surveillance dramatically, with the non-polio AFP rate more than doubling from 0.30 in 1998 to 0.70 in 1999. However, only 31% of AFP cases had adequate specimens collected. Priority countries for surveillance improvement include Madagascar, Malawi, Mozambique, and Ethiopia (Figure 3).

- **The Eastern Mediterranean Region** improved surveillance as the non-polio AFP rate increased to 1.13 from 0.88 in 1998. Among the six polio-endemic countries, Egypt, Iraq, and Pakistan achieved a non-polio AFP rate > 1, with Afghanistan close at 0.95. Somalia and Sudan reported rates of 0.79 and 0.52, respectively. Region-wide, the percentage of cases with adequate specimens rose slightly to 69% in 1999 from 64% in 1998. The continued surveillance achievements in Afghanistan, Somalia and Sudan demonstrate that high quality surveillance can be implemented even in the most difficult circumstances.

- **The South East Asia Region** increased its non-polio AFP rate to 1.52 in 1999 from 1.25 in 1998. Two of the four polio-endemic countries, India and Nepal, achieved the standard for reported non-polio AFP rates with rates of 1.8 and 1.9, respectively. Nepal substantially improved surveillance, with their non-polio AFP rate increasing from 0.41 in 1998 to 1.91 in 1999. Bangladesh also improved its AFP surveillance from 0.33 in 1988 to 0.63 in 1999. AFP surveillance in DPR Korea remains inadequate. Region-wide, the percentage of cases with adequate specimens increased to 71% in 1999 from 60% in 1998. During 2000, priority countries for improving surveillance are DPR Korea, Myanmar, and Bangladesh (Figure 3).

Mop-up Immunization Campaigns

Mop-up is the "end game" strategy for polio eradication where high-quality AFP surveillance information is used to identify remaining pockets of virus transmission. Intense house-to-house immunization activities are then targeted to eliminate the final chains of virus transmission. During early 1999, Mop-up was conducted in southeast Turkey and neighboring provinces of Iran, Iraq, and Syria following a case reported in Turkey in late 1998. No additional cases have been reported since then in Turkey, Iran, or Syria.

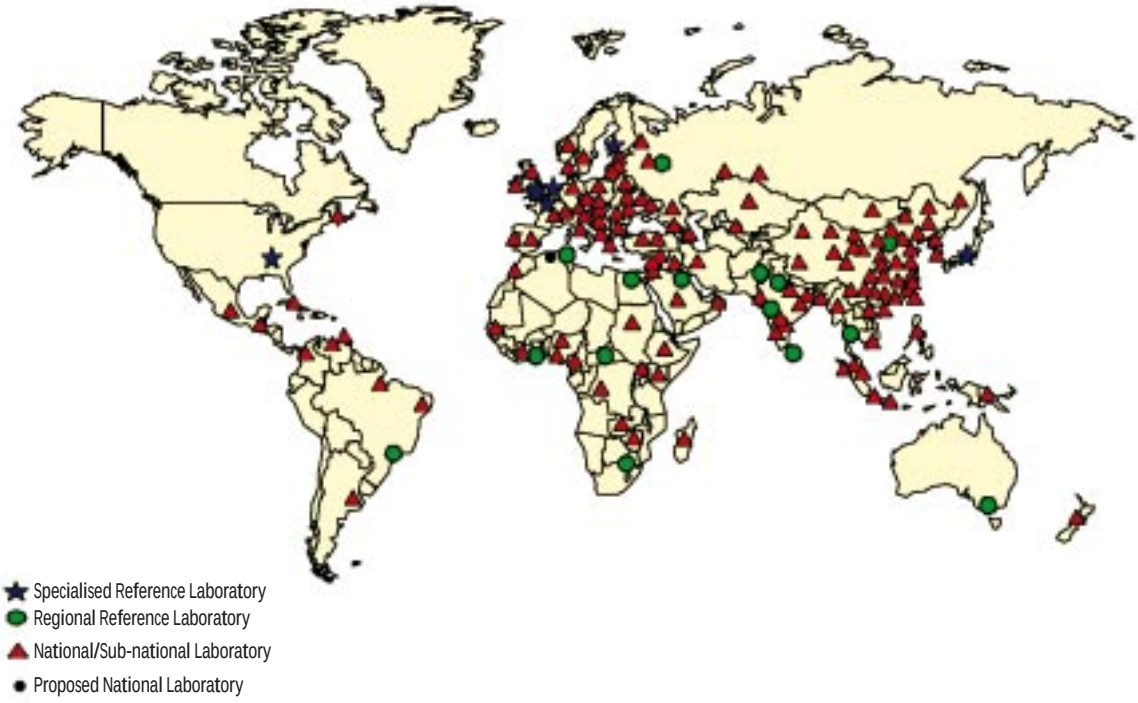
NOTE: Although house-to-house immunization was conducted during NIDs or in response to a detected case in many countries during 1999, this was intended to improve the quality of activity and reach unreached children. It did not meet the criteria of classic Mop-up to stop the final chains of poliovirus transmission.

Status of the Global Polio Laboratory Network

Standard guidelines, procedures, cell lines and reagents have been established and implemented in laboratories at each level of the network. During 1999, almost all stool specimens from AFP cases were processed in WHO-accredited laboratories. Over >50 000 specimens were processed for viral isolation, >3 000 poliovirus and >10 000 non-polio enterovirus were isolated, serotyping and intratypic differentiation were carried out on all poliovirus isolates, and genomic sequencing information provided on nearly all programmatically important wild poliovirus isolates. The India and Nigeria country experiences illustrated the dramatic increase in laboratory workload between 1997 and 1999 (India from 1 570 specimens in 1997 to 15 800 specimens in 1999 [a >10-fold increase], and Nigeria from 71 specimens in 1997 to 923 specimens in 1999 [a 13-fold increase]).

At end of 1999, 123 (83%) laboratories had international phone or fax lines, and/or access to email, but 25 (17%) continued to have inadequate communications. Arrangements are being made to ensure that wild-type poliovirus isolates are being shipped in a timely and frequent manner to specialized laboratories that have the capacity to sequence this isolates.

Figure 4: Global Laboratory Network for polio eradication, 2000



As of January 2000

Routine Immunization

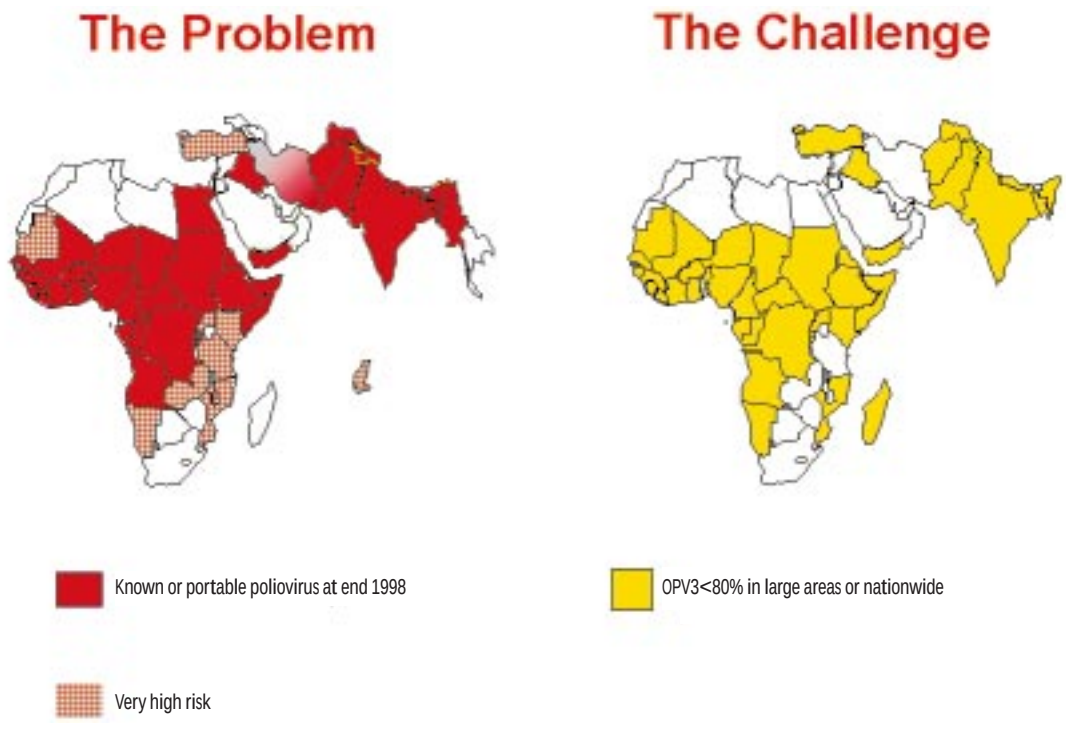
Both reported and survey-confirmed routine immunization coverage with OPV3 is low and stagnating in the remaining priority countries. Improvements in routine immunization are urgently needed, and efforts to accelerate polio eradication provide a useful opportunity to boost routine immunization, strengthen EPI target disease surveillance together with AFP surveillance, improve the cold chain, and train health workers and mid-level program managers. The absence of reliable basic immunity to polio through routine immunization is one of the main reasons underlying the need for additional nationwide immunization campaigns to reach the eradication target. (Figure 5)

The Global Alliance for Vaccines and Immunization (GAVI)

The Global Alliance for Vaccines (GAVI) was established during 1999 as a major new initiative that will facilitate polio eradication, especially by improving routine immunization coverage. GAVI has representation from all immunization partners, including WHO, UNICEF, World Bank, national governments, bilateral donors, foundations, and corporations. GAVI's objectives are to achieve a new broader and revitalised EPI, and all immunization partners are a part of GAVI. GAVI is supportive of immunization in general and of the polio eradication initiative in particular. The challenge is to ensure that WHO, UNICEF, and others – as GAVI partners – develop strategies that take full advantage of renewed international support for immunization to finish polio eradication. The lessons learned and infrastructure developed from polio eradication must be utilized in fulfilling GAVI's objectives.

Country level activities of GAVI partners will be coordinated closely with those of polio eradication. In polio-free countries, GAVI's objectives are to facilitate the introduction of new vaccines and promote certification standard surveillance. In polio-endemic countries that will conduct additional NID rounds, GAVI partners will ensure that new activities complement NIDs and do not disrupt polio eradication. In addition, GAVI will support strengthening of routine immunization services. In countries believed to be polio free but with poor AFP surveillance, the GAVI initiative will be used to strengthen AFP surveillance through the multi-year immunization plan that will be developed and implemented. ❐

Figure 5: Polio-endemic countries and low OPV3 coverage



Optimizing the Impact of Polio Eradication on Health Systems

The 41st World Health Assembly in 1998 committed WHO to the goal of polio eradication by the year 2000 "...in ways which strengthen national immunization programmes and health infrastructure." WHO, together with partner organizations, has continued efforts to ensure that polio eradication activities complement and support efforts to strengthen routine health services. In December 1999, WHO convened a meeting, "The Impact of Targeted Programmes on Health Systems: A Case Study of the Polio Eradication Initiative" to present and share findings of these case studies and other assessments. Key studies and findings include:

- WHO, with support from USAID and DFID, initiated a study in 1997 to develop a methodology and country case studies in Tanzania, Nepal, and the Lao People's Democratic Republic. These studies found both positive and negative impacts of the polio eradication activities, and concluded that with better planning and objectives, positive impacts could increase and negative impacts could be reduced.

- The All India Institute of Medical Sciences Evaluation of Pulse Polio Immunization Program concluded that the polio eradication initiative had strengthened management capacity, improved social mobilization, and increased confidence in the health care system. It recommended better planning to minimize the disruptions from NIDs.

- A USAID-funded study found that the implementation of polio eradication activities was not associated with a decrease in funding for routine EPI in Bangladesh, Cote d'Ivoire, and Morocco. Rather, overall funding for immunization activities increased.

- A report on Lessons Learned in the Development of the Global Polio Eradication Network concluded that the principles of quality assurance and laboratory accreditation used in the laboratory network can be used to improve quality of other health programs.

- A UNICEF study in Benin and Niger found no strong evidence about the impact of the polio eradication initiative on routine coverage, but recognized missed opportunities to link polio eradication with other programs, and to strengthen EPI.

- There was broad recognition that NIDs have served as a vehicle for Vitamin A supplementation. In AFRO, Vitamin A supplementation has surged by >500% since NIDs were implemented in 1996.

Although there is little reliable quantifiable data, negative impacts of the polio eradication activities that have been reported include disruption of routine EPI activities and disruption of other health services. These could be reduced or avoided by better planning, renewing the focus on routine immunizations, by linking AFP surveillance to surveillance for other diseases, and by using training and supervision for the polio eradiation initiative as an opportunity for other health services. Other recommendations from the WHO meeting include the following:

(1) A matrix framework of indicators developed for the country case studies should be distributed as a simple planning and assessment tool for country managers.
(2) A "state-of-the-art" paper should be drafted to compile existing documentation on the impact of polio eradication.
(3) Efforts to document current gaps in knowledge of the impact of polio eradication should be initiated. ❐

Preparing for the Post-eradication Era

After twelve years, the polio eradication initiative has reached every polio endemic country on earth, the burden of disease has been dramatically reduced and wild poliovirus transmission contained to a limited number of countries. The progress achieved to date makes it likely that polio will be eradicated worldwide in the near future. Accordingly, WHO Vaccines and Biologicals is now expanding its focus to deal with the issues of the post eradication era: Containment, Certification and Stopping Immunization.

Containment

Since there is no animal or environmental reservoir for polioviruses, the only source of poliovirus after human transmission ceases will be laboratories. To prevent the possibility of an inadvertent escape of wild virus from a laboratory, wild poliovirus stocks must be stored in secure laboratory facilities. A plan for containment of polioviruses was prepared in late 1998 and circulated widely for comment in the scientific and biosafety communities. A final plan of action has been prepared. It calls for national biosafety authorities to inventory all stocks of poliovirus and potentially infected materials. Poliovirus strains should no longer be present in facilities where their use is not essential. Strains of scientific value should be moved to secure repositories. One year after the last wild poliovirus is identified all remaining stocks should be placed in maximum containment laboratories where essential scientific work can continue. The procedures called for in the containment plan are currently being field tested in the American, European and Western Pacific Regions.

Certification

The processes for certifying global polio eradication were defined in 1995 at the first meeting of the Global Commission for the Certification of the Eradication of Poliomyelitis. Certification required at least three years of zero polio cases under conditions of good surveillance. AFP surveillance was to be the primary surveillance tool. The process called for National Committees to prepare reports for review by Regional Certification Commission, which would, in turn, report to the Global Commission. As of 1999, all Regions now have a certification commission that has met to define the Regional Processes. With the last indigenous case in the Western Pacific Region occurring in March 1997, the Western Pacific Commission is preparing to receive reports from its member states in the year 2000. The European Regional Commission has begun reviewing preliminary reports from its member states in anticipation of certifying that Region free of polio in 2001, three years after the last case in Turkey in November 1998. Although it has begun to receive preliminary reports from the more advanced countries in its Region, the Eastern Mediterranean Region has affirmed that the Region must be certified as a whole, emphasizing the need to achieve rapid progress in the remaining endemic countries. The African and Southeast Asian Regional Commissions have met to plan their work over the next years.

Stopping Immunization

Stopping immunization against polio is the ultimate objective of the eradication initiative and will yield annual global savings of US $1.5 billion. A meeting was held in March 1998 to review exist-

ing scientific data relevant to stopping immunization. A research agenda was defined so that new data could be developed using modern techniques and to take advantage of opportunities presented by the absence of circulating wild virus in developing countries. Three foci were outlined: the potential for vaccine derived viruses to continue circulating after immunization is stopped, persistent shedding of vaccine derived polioviruses among immunodeficient persons and the need for new polio vaccines in the post eradication era. As a result, a number of research projects were initiated. A meeting was held in April 1999 to review progress on these studies. In addition, a meeting was planned for January 2000 to discuss new polio vaccines. Because manufacturers will need 5-7 years lead time to ensure that sufficient quantities of any vaccine other than the current OPV will be available when needed, it is anticipated that a meeting will be held in later 2000 to review new scientific data and recommend a strategy for stopping immunization. ❒

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Partnership Support and Advocacy

The success of the polio eradication initiative hinges upon the successful partnership of the public and private sectors. The partnership is spearheaded by WHO, Rotary International, U.S. Centers for Disease Control and Prevention, and UNICEF. The coalition is made up of national governments; private foundations (e.g. United Nations Foundation, Bill & Melinda Gates Foundation); development banks (e.g. World Bank); donor governments (e.g. Australia, Belgium, Canada, Denmark, Finland, Germany, Italy, Japan, UK and US), and corporate partners (e.g. Aventis Pasteur, De Beers).

Rotary International

Through its Polio Plus programme, Rotary International has been a key player in stimulating, developing, and maintaining the global poliomyelitis eradication initiative. By end of 2005, Rotary estimates that its contribution to the initiative will total US $500 million, as well as millions of volunteer hours throughout the world to promote and participate in polio eradication activities. During 1999, Rotary awarded grants totalling US $32 million.

New Partnership Support

- The Bill & Melinda Gates Foundation provided US $50 million and Mr. Ted Turner's United Nations Foundation granted US $28 million to strengthen the vaccine delivery infrastructure and strengthen surveillance systems.
- De Beers made a multi-year donation of US $2.7 million to fund NIDs in Angola during 1999 and 2000, targeting 3.3 million children in six rounds of nationwide immunization days.
- Aventis Pasteur (formerly Paster Merieux Connaught) donated 50 million doses of vaccine (approximately US $5 million) for NIDs in five countries affected by war (Angola, Liberia, Sierra Leone, Somalia, and Sudan) during 2000 – 2002.
- The World Bank joined with the Government of India to support the massive acceleration in that country by reprogramming US $48 million in health sector loans.

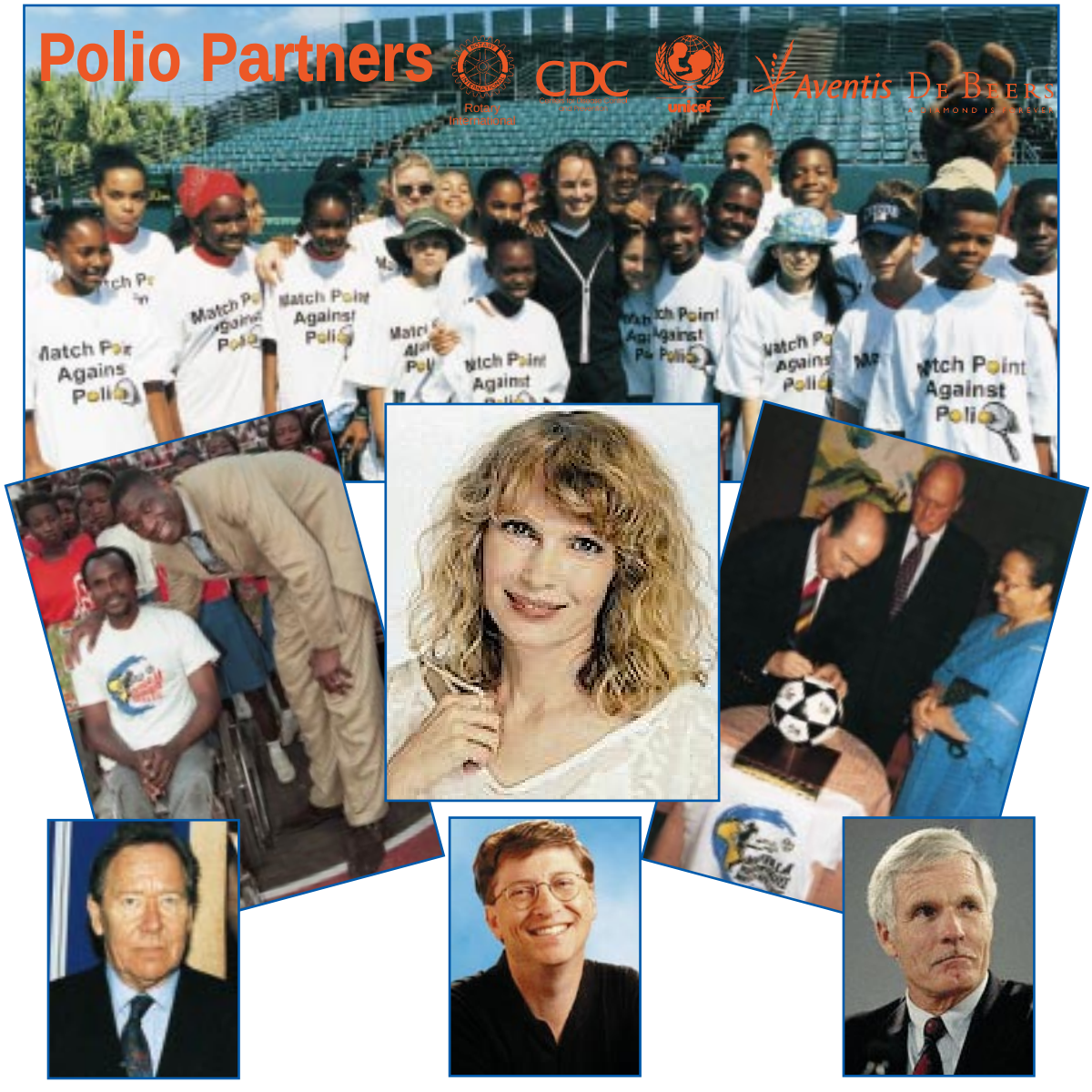
Increased Support from Existing Partners

- Donor governments increased bilateral support to India, including the UK (US $62 million), the European Union (US $6 million), Germany (US $7.5 million), and Italy (US $1 million). India has the largest resource requirements of any country, and usually accounts for 35% of global external need in a given year.
- Canada pledged multi-year support to Nigeria in the amount of C $6 million (US $4.2 million). Nigeria is second to India in terms of resources required for polio eradication, and usually accounts for 15% of annual global costs.
- In addition to the support targeted to India, the UK government's Department for International Development also pledged to support six of the ten priority countries that are on the African continent (Angola, DR Congo, Ethiopia, Nigeria, Somalia, and Sudan) with a grant of £20 million (US $32 million).
- The government of the United States (Centers for Disease Control and Prevention) responded to the joint UNICEF-WHO appeal for OPV with an additional commitment of US $15 million for 2000. The government of Japan is planning to increase its commitment for OPV in 2000.

Partnership Advocates for Polio Eradication

During 1999, many civil-society partners joined Rotary-led advocacy for polio eradication.

- One of the world's leading tennis stars, Martina Hingis and star basketball player, Dikembe Mutombo, with the National Basketball Association's Atlanta Hawks gave high-profile support. Mutombo lent support in his native DR Congo by visiting a hospital to immunize babies and making Public Service Announcements broadcast by Voice of America.
- World-renowned British photographer Lord Snowdon, who had polio, traveled to war-torn Angola in May through the support of De Beers to prepare and share with the world photographic records of the 1999 polio outbreak.
- The Federation Internationale de Football Association committed players and resources toward the final stretch in efforts to "Kick Polio out of Africa." During 2000, messages recorded by players will be broadcast across the continent, billboard ads will carry messages, and leaflets will be distributed at games.
- Ms. Mia Farrow agreed to serve as UNICEF Special Representative for Polio Eradication. She participated with her son Thaddeus, who had polio, in the launch of UNICEF's annual Progress of Nations report that highlighted the eradication initiative during 1999. ❐

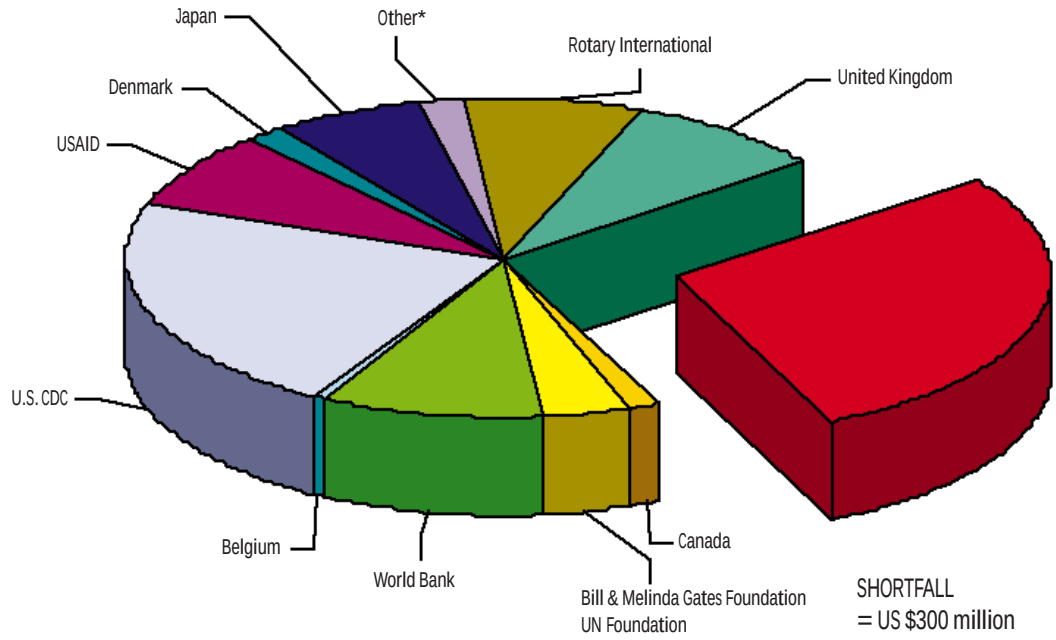


Financial Resource Requirements, 2000-2005

During January 1999, the first detailed financial resource estimates were compiled for the Mop-up and Certification Phase, 2000 – 2005. Paradoxically, the final Mop-up Phase of the eradication initiative will be the most expensive due to the intensity of activities, particularly the necessary house-to-house immunization of large groups of children.

Currently projections are that US $1 billion in external resources will be needed for polio eradication activities from 2000 through 2005. Donor contributions through 2005 are projected at US $700 million, leaving a US $300 million shortfall (Figure). Required external resources for the ten global priority countries for polio eradication comprise approximately 70% of the US $300 million global need. Approximately two-thirds of the shortfall is required during 2000 through 2002. ❐

Figure 6: External resources: Projected contributions by partner agency and shortfall, 2000-2005



* Italy, Finland, Germany, Aventis-Pasteur, DeBeers

External resource req'd = US $1000m
Received/projected = US $700m

Challenges and Priorities during the Mop-up and Certification Phase, 2000-2005

Polio-free Regions

Ensuring adequate supplies of OPV for NIDs and Mop-ups

During 1999, an OPV shortfall occurred due to rapid implementation of accelerated activities (especially the additional rounds of NIDs in large reservoir countries), interruption of production at one vaccine manufacturer, and rescheduling of large orders. To ensure the 2000 global OPV supply, UNICEF made available US $100 million to guarantee purchase of the total OPV amount offered in global tender for 2000. WHO, UNICEF, and manufacturers further streamlined information exchange, and strengthened vaccine forecasting, planning, and coordination among UN agencies, vaccine manufacturers, and donor governments. However, ongoing problems with delivery dates and possibly insufficient total supply are major risks to timely completion of eradication activities in 2000 and 2001.

Maintaining Political Commitment

Sustaining political commitment is a major challenge in the face of a disappearing disease, but is critical in polio-endemic countries to support the acceleration of high-quality eradication activities, and to establish necessary multi-sectoral support. Some countries, particularly on the African continent, have stopped NIDs, despite surveillance sensitivity that remains well below certification standards. Experience in other Regions has conclusively demonstrated that such actions may jeopardize progress because low-level polio transmission can continue undetected for more than three years in areas with sub-optimal surveillance. The longer that poliovirus transmission continues, the higher the risk of re-infecting polio-free areas.

Ensuring Access to All Children

In Conflict Countries: The success of the UN Secretary-General and other partners in establishing "Days of Tranquillity" for NIDs during 1999 in DR Congo demonstrated again the feasibility of working successfully in conflict-affected areas. These efforts must be expanded during 2000, drawing upon the strengths of the UN Secretary-General, many UN agencies, and other important partners to promote peace and to support logistical operations during a cessation of hostilities, particularly in Afghanistan, Angola, DR Congo, Sierra Leone, Somalia, and Sudan.

In All Polio-endemic Countries: The slogan "Every Child Counts" was adopted for the final push for polio eradication, and to emphasize that all must be reached and vaccinated. To do so, all immunization campaigns must be of the highest quality, and many must include a house-to-house vaccination strategy to reach all children.

Ensuring Adequate Financial Resources

The projected US $300 million shortfall through 2005 must be rapidly met to ensure that the acceleration strategy is not delayed. Delay in achieving the target date will increase the total cost of eradication by as much as US $100 million per year. It will also be difficult to sustain current funding levels for more than 24-36 months, especially for polio-free countries that need to continue NIDs to protect against importations.

Country Priorities

Overcoming obstacles and ensuring the highest quality of activities in the 30 remaining polio-endemic countries will be given highest priority. In particular, efforts will focus upon 17 of 30 countries. ten are "global" priorities because they face particular challenges requiring multi-year intensified activities. These countries fall into two categories:

- **"polio virus reservoirs",** where transmission is particularly intense due to large, dense populations, low routine immunization coverage, and poor sanitation. The countries in this category are India, Pakistan, DR Congo, Bangladesh, Nigeria, and Ethiopia.

- **countries affected by conflict,** where implementation of vaccination and surveillance activities is particularly challenging due to destroyed infrastructure. The countries in this category are DR Congo, Angola, Afghanistan, Somalia and Sudan. All have started accelerated immunization activities.

DR Congo is a special case. As both a global reservoir and a country affected by conflict, it faces challenges inherent to both groups.

Central to the success of polio eradication is ensuring that extra rounds of high-quality NIDs are conducted in 2000 and 2001, particularly in nine of the ten global priority countries: Afghanistan, Angola, Bangladesh, DR Congo, India, Nigeria, Pakistan, Somalia, and the Sudan. In the tenth priority country, Ethiopia, the critical priority is achieving certification standard surveillance.

Regional Priorities

In addition to the global priority countries, within each WHO Region there are strategic priority countries that evolve as the polio eradication program progresses. At beginning 2000, seven particular priorities are:

- AFRO: Chad, Congo, Liberia, Niger, Sierra Leone
- EMRO: Iraq
- SEARO: DPR Korea

Programmatic Priorities

Ensuring High-Quality NID Strategy Implementation

A multi-sectoral approach is needed in many countries to improve the quality of supplementary immunization activities to ensure that every child is reached. In PAHO countries, interruption of polio transmission required the collaborative efforts of all government agencies, including the armed forces, to reach and immunize all children. Although more children are now being vaccinated than ever before, some are still unreached due to poor microplanning, inadequate social mobilization, and lack of access due to conflict. During 2000, targeted efforts will seek to overcome these hurdles, including augmentation of country-level technical and administrative capacity.

High-quality AFP surveillance

Late detection of polio-infected areas can be a consequence of non-certification standard surveillance. Particularly during the Mop-up Phase of polio eradication, high-quality AFP surveillance is essential to identify the remaining pockets of polio and to target immunization activities to break the final chains of transmission.

Strengthening the Laboratory Network

The laboratory network's workload will increase dramatically once countries reach the standard level of AFP performance, as demonstrated by Nigeria and India. Laboratories in two important polio-endemic countries (i.e., Bangladesh and Ethiopia) have not yet been accredited. While specimens from these countries do get processed in accredited laboratories elsewhere, it is important that these large priority countries develop capacity to process stool specimens. Laboratory accreditation in DPR Korea is critical. ❐


Photo: UNICEF/Murray-Lee

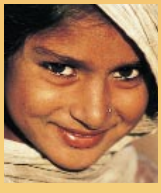

Photo: UNICEF/Lemoyne


Photo: Irene R. Lengui/L.IV


Photo: UNICEF/Sprague


Photo: UNICEF/Asbus


Photo: UNICEF/Peru



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